AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. - 63. (Canceled)

64. (Previously Presented) A system for detecting target molecules in a sample, comprising:

an assembly comprising:

a silicon portion having an array of microsensors, wherein at least some of the microsensors are functionalized to deflect when exposed to target molecules; and

a glass portion, the silicon portion and the glass portion forming an individual fluid cell for each of the microsensors and wherein each of the individual fluid cells has an inlet and an outlet;

an optical beam source configured to simultaneously direct an optical beam onto each of the microsensors in the array of microsensors; and

an optical detector array configured to simultaneously detect the position of each of the microsensors.

65. (Previously Presented) The system of claim 64, wherein the microsensors are microcantilevers.

66. (Previously Presented) The system of claim 64, wherein the microsensors are membranes.

67. (Currently Amended) The system of claim 65, wherein each of the microcantilevers has a reflective paddle portion, and the optical beam is directed onto the reflective paddle portion of each of the microcantilevers.

68. (Previously Presented) The system of claim 67, wherein the reflective paddle portion is flat.

69. (Previously Presented) The system of claim 67, wherein the reflective paddle portion includes a strengthening ridge, which prevents the reflective paddle portion from bending.

70. (Previously Presented) The system of claim 64, wherein the array of microsensors is a linear array.

71. (Previously Presented) The system of claim 64, wherein the array of microsensors is a two-dimensional array.

72. (Previously Presented) The system of claim 64, wherein the optical beam is a collimated beam of laser light.

73. (Previously Presented) The system of claim 64, wherein the optical detector array is configured to simultaneously detect the position of each of the microsensors in real time.

74. (Previously Presented) The system of claim 64, wherein the optical detector array is a CCD array.

75. (Previously Presented) The system of claim 64, wherein the optical detector array is a CMOS array.

76. (Previously Presented) The system of claim 64, further comprising:

at least one microsensor that is not functionalized to deflect when exposed to the target molecules.

77. (Previously Presented) The system of claim 64, wherein different microsensors in the array are functionalized to detect different target molecules.

78. (Previously Presented) The system of claim 64, wherein at least one of the microsensors is positioned to be submerged in the fluid cell when a fluid sample is received in the fluid cell.

79. (Previously Presented) The system of claim 64, wherein the fluid cell is transparent to the optical beam.

80. (Previously Presented) The system of claim 64, further comprising:

a system for introducing a fluid sample into the fluid cell, wherein flow of the fluid sample can be stopped in the fluid cell.

81. (Previously Presented) The system of claim 64, wherein the optical detector array is configured to simultaneously detect the position of each of the microsensors by interferometry.

82. (Previously Presented) The system of claim 64, wherein the optical detector array is configured to simultaneously detect the position of each of the microsensors by detecting movement of beams of light reflected by each of the microsensors.

83. (Previously Presented) The system of claim 64, further comprising a beam splitter, wherein the beam splitter directs the optical beam onto each of the microsensors in the array of microsensors.

84. (Previously Presented) The system of claim 83, further comprising a reference surface, and wherein the reference surface reflects part of the optical beam and transmits part of the optical beam.

85. (Previously Presented) The system of claim 69, wherein the strengthening ridge is on a bottom portion of the reflective paddle.

86. (Previously Presented) The system of claim 69, wherein the strengthening ridge comprises a ridge running around at least a portion of the reflective paddle.

87. (Previously Presented) The system of claim 69, wherein the strengthening ridge is on a top portion and a bottom portion of the reflective paddle.

88. (Previously Presented) The system of claim 64, wherein the glass portion is polydimethylsiloxane.

89. (Previously Presented) The system of claim 64, wherein the silicon portion is silicon nitride.

90. (Cancelled)

91. (Cancelled)

92. (Previously Presented) A system for detecting target molecules in a sample, comprising:

an array of microsensors, each microsensor having an individual microfluid reservoir, and wherein at least some of the microsensors are functionalized to deflect when exposed to a target molecule;

an optical beam source configured to simultaneously direct an optical beam onto each of the microsensors in the array of microsensors;

an optical detector array configured to simultaneously detect the position of each of the microsensors; and

wherein each of the individual microfluid reservoirs has at least one channel for introducing a fluid sample into the individual microfluid reservoirs and a through hole for functionalization of the individual fluid reservoirs.

93. (Previously Presented) The system of claim 92, wherein the microsensors are microcantilevers.

94. (Previously Presented) The system of claim 92, wherein the microsensors are membranes.

95. (Currently Amended) The system of claim 93, wherein each of the microcantilevers has a reflective paddle portion, and the optical beam is directed onto the reflective paddle portion of each of the microcantilevers

96. (Previously Presented) The system of claim 95, wherein the reflective paddle portion is flat.

97. (Previously Presented) The system of claim 96, wherein the reflective paddle portion includes a strengthening ridge, which prevents the reflective paddle portion from bending.

98. (Previously Presented) The system of claim 92, wherein the array of microsensors is a linear array.

99. (Previously Presented) The system of claim 92, wherein the array of microsensors is a two-dimensional array.

100. (Previously Presented) The system of claim 92, wherein the optical beam is a collimated beam of laser light.

101. (Previously Presented) The system of claim 92, wherein the optical detector array is configured to simultaneously detect the position of each of the microsensors in real time.

102. (Previously Presented) The system of claim 92, wherein the optical detector array is a CCD array.

103. (Previously Presented) The system of claim 92, wherein the optical detector array is a CMOS array.

104. (Previously Presented) The system of claim 92, further comprising at least one microsensor that is not functionalized to deflect when exposed to the target molecules.

105. (Previously Presented) The system of claim 92, wherein different microsensors in the array are functionalized to detect different target molecules.

106. (Previously Presented) The system of claim 92, wherein the reservoir is transparent to the optical beam.

107. (Previously Presented) The system of claim 92, further comprising a system for introducing the fluid sample into the reservoir, wherein flow of the fluid sample can be stopped in the reservoir.

108. (Previously Presented) The system of claim 92, wherein the optical detector array is configured to simultaneously detect the position of each of the microsensors by interferometry.

109. (Previously Presented) The system of claim 92, wherein the optical detector array is configured to simultaneously detect the position of each of the microsensors by detecting movement of beams of light reflected by each of the microsensors.

110. (Currently Amended) A system for detecting target molecules in a sample, comprising:

an assembly comprising:

an array of microcantilever beams, wherein each of the microcantilever beams is comprised of a cantilever beam and a reflective paddle, the reflective

paddle portion including a strengthening ridge, which prevents the reflective paddle portion from bending; and

an individual fluid cell for each of the microcantilever beams, and wherein at least some of the microcantilever beams are functionalized to deflect when exposed to target molecules;

an optical beam source configured to simultaneously direct an optical beam onto the reflective paddle portion of each of the microcantilever beams in the array of microcantilever beams; and

an optical detector array configured to simultaneously detect the position of the reflective paddle portion of each of the microcantilever beams.

111. (Previously Presented) The system of claim 110, wherein the reflective paddle portion is flat.

112. (Previously Presented) The system of claim 110, wherein the strengthening ridge is on a bottom portion of the reflective paddle.

113. (Previously Presented) The system of claim 110, wherein the strengthening ridge comprises a ridge running around at least a portion of the reflective paddle.

114. (Previously Presented) The system of claim 110, wherein the strengthening ridge is on a top portion and a bottom portion of the reflective paddle.